IDAHO
DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

McCall Hatchery

Annual Report

October 1, 1979 - September 30, 1980

by

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Fish Hatchery Superintendent I

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ABSTRACT

The new McCall Hatchery was constructed in 1980 as part of the Lower Snake River Fish and Wildlife Compensation Plan, to compensate for losses, caused by the Lower Snake River Dams. Its primary purpose is for the production of summer chinook salmon. However, all state programs conducted in the past as well as some new ones are being continued.

Production at McCall included: 235,685 (1,253 pounds) rainbow trout fry, 32,819 (176 pounds) Henrys Lake cutthroat fry and 84,933 (108 pounds) rainbow/cutthroat hybrid fry. A total of 2,400 pounds of feed was fed at a cost of $697.70. A conversion of 1.56:1 was attained and the feed cost per pound of fish produced was $:454. When all costs are included except capital outlay items, each pound of fish produced required an expenditure of $10.44. This figure includes the costs incurred in planting catchable trout transferred for planting in the central Idaho area.

In addition to raising fry, McCall is used as a redistribution station for catchable size rainbow trout. We planted 117,128 (35,000 pounds) catchables that were trucked up from Hagerman State Hatchery.

This year 168 high mountain lakes were planted by fixed-wing aircraft and backpack. The High Mountain Lakes Program involves planting approximately 600 lakes on a 3 year rotation system (200/year).

A fish trap was installed at Fish (Mud) Lake to obtain Kings Lake cutthroat (Westslope) eggs. Unfortunately, no eggs were taken this year. It is felt that the majority of the fish didn't mature this year.

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OBJECTIVES

The state objectives of the new McCall Hatchery are to:

1. Release approximately 35,000 pounds of catchable size rainbow trout, that are trucked to McCall Hatchery from Hagerman State Hatchery, into 38 streams and 19 lakes and reservoirs in Regions 2 and 3.

2. Stock approximately 600 high mountain lakes with trout fry in Regions 2 and 3 on a 3 year rotation system (200/year).

3. Operate and maintain a fish trap at Fish (Mud) Lake for the purpose of obtaining cutthroat (Westslope) eggs.

INTRODUCTION

The new McCall Hatchery was constructed in 1980 by the Corps of Engineers as part of the Lower Snake River Fish and Wildlife Compensation Plan, which was authorized to compensate for losses, caused by the Lower Snake River Dams (Ice Harbor, Lower Monumental, Little Goose and Lower Granite). Its primary purpose is for the production of summer chinook salmon (See Wimer: McCall Hatchery 1980 Annual Report # 03-68-371). However, all state programs (i.e. planting catchable size rainbow and stocking high mountain lakes) conducted in the past, as well as new programs are being continued. This report will cover all State Programs at McCall.

The hatchery is located in McCall, Idaho along the North Fork of the Payette River, 1/4 mile downstream from the Payette Lake regulating dam. Its water supply comes from Payette Lake via a 36 inch underground transmission line. All water into the hatchery is gravity flow and we have the capability of varying our temperature by mixing surface water with that taken from a pipe extending 1,500 feet out into the lake and a depth of 50 feet. Our water temperature varied from 37° F in the winter to 59° F in the summer. The hatchery is designed for normal operation of 20 cfs {cubic feet per second) but state programs require only about 2 cfs.

McCall is equipped with 26 stacks of Heath incubator trays at 8 trays per stack. The hatchery has 14 vats (40 feet x 4 feet x 4 feet) with the capability of varying the rearing space to the 10, 20, or 40 foot sections. Two outdoor rearing ponds (196 feet x 40 feet x 4 feet) are used exclusively for salmon production. A collection basin (100 feet x 15 feet x 3 feet) is used for holding catchable size rainbow trout during redistribution. A settling pond approximately 70 feet wide and 170 feet long is used to fulfill EPA (Environmental Protection Agency) waste water discharge requirements.

FISH PRODUCTION

Three species of fish were raised at McCall this year: rainbow trout, cut-throat trout and rainbow/cutthroat hybrids (See Table 1). In March 309,732 eyed rainbow eggs were received from Caribou Trout Ranch, Soda Springs, Idaho. There were 280,531 fry hatched, resulting in a 90.6% hatching success. By the end of the fish year 235,685 rainbow fingerlings were produced, for a success rate of 76% (fish produced/eggs received). In May and June 92,728 eyed Henrys Lake cut-throat eggs and 269,952 eyed Rb x Ct (rainbow x cutthroat hybrids crossed with a pure cutthroat) eggs were received from Henrys Lake Hatchery. A hatching success of 52.4% was achieved with the cutthroat and 32,819 fingerlings were produced for a success rate of 35.4%. The hybrids had a hatching success of

53.7% and 84,933 fingerlings were produced, a success rate of 31.5%.

Table 1. Fish production at McCall Hatchery, October 1, 1979 - September 30, 1980

Species	Eggs rec'd	Fish hatched	Hatching %	Fish produced	Pounds
Rainbow	309,732	280,531	90.6	235,685	1,253
Cutthroat	92,728	48,628	52.4	32,819	176
Rb x Ct	269,952	144,969	53.7	84,933	108
Totals	672,412	474,128	-	353,437	1,537

FISH HEALTH

The general health of our fish at time of release was excellent. No major disease problems were encountered this year.

One minor outbreak did appear this year. Early in September flashing was observed in our fingerling trout. Through microscopic examination, Costia sp. was found on the body surface. A bioassay was conducted with Formalin at 1:5,000 (200 ppm) for a one hour drip. Post treatment examination found no Costia on the body. An identical treatment was administered to all rainbow and cutthroat fingerlings in the hatchery. All of the Costia organisms were eradicated. No significant mortality was seen in the cutthroat, however, the rainbow did experience a 0.9% mortality. In the future, a treatment of Formalin at 1:6,000 (167 ppm) will be used in an attempt to eliminate the problem and reduce mortality in the rainbow fingerlings.

Several factors can be attributed to the high mortality we experienced in our cutthroat and hybrids: (1) The eggs were some of the last taken at Henrys Lake this year; (2) The eggs were soft-shelled; (3) The eggs were shipped in very poor condition and some lots were in the process of hatching when received at McCall; (4) In the case of the hybrids, the eggs were a result of a back-cross, most likely resulting in a less viable fish. Resulting fry from these eggs were poor and required special attention in rearing. Even though the survival percentage was low the surviving fish were generally in good condition.

FISH PLANTING

Catchable Program

McCall is used for redistributing catchable size rainbow trout trucked from Hagerman State Hatchery. Fish are brought up beginning in mid-May and planted as allocations require. Throughout the summer, fish are received until all allocations are met. During the past year, 117,128 (35,000 pounds) catchables were planted in 18 lakes and reservoirs and 33 rivers and streams in our area.

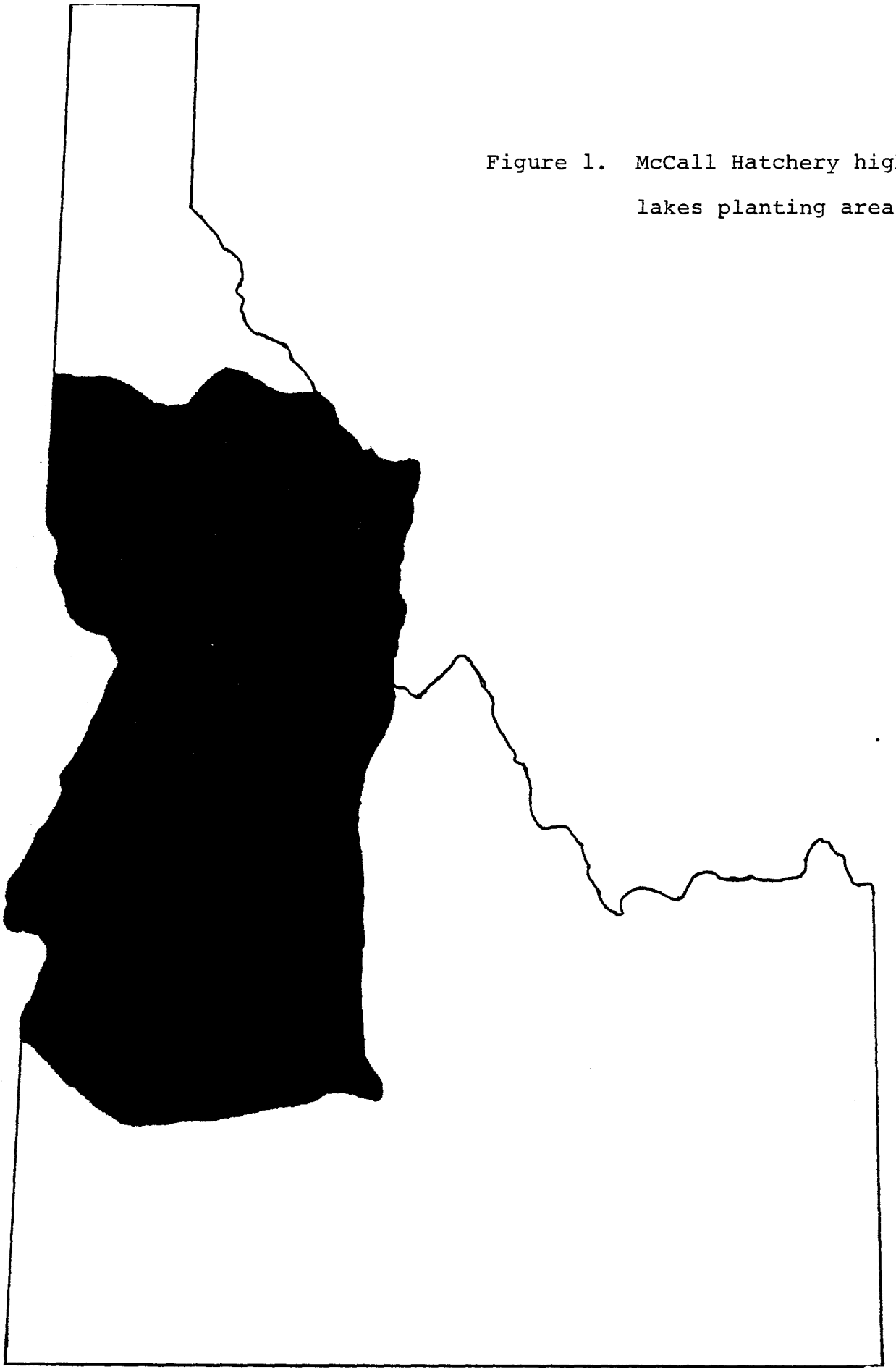

Figure 1. McCall Hatchery high mountain lakes planting area.

Fish are planted in Adams, Idaho, Valley and Washington Counties within Regions 2 and 3. Our stocking season is from mid-May until the first of September. Planting is done by a 2-ton tank truck, capable of hauling 800 pounds of catchables, and a 3/4-ton pick-up with a 200 gallon tank and 400 pound capacity.

High Mountain Lakes Program

This program involves planting trout fry in approximately 600 high mountain lakes in Regions 2 and 3. These lakes are planted on a 3 year rotation system (200 per year). The area planted extends from the Trinity Mountains north to above the North Fork Clearwater River (See Fig. 1). This year 168 lakes were planted with 38,743 (65 pounds) rainbow fry and 72,669 (87 pounds) Rb x Ct fry. Our planting season extends from July throughout August, and plants are made only when weather permits.

After the allocations are received, lakes are mapped out and flights scheduled with up to 20 lakes planted per flight. Approximately one pound of fish are placed in a 3 gallon plastic milk bag containing one gallon of chilled water. The remainder of the bag is filled with pure oxygen. After all of the scheduled bags are filled they are loaded in the plane. All flights leave before sunrise and most last about 3 hours. Once in the air the task of finding each lake begins. Luckily, we have the services of veteran pilot Bill Dorris, who has planted these lakes for many years and knows the area as well as anyone around.

When the assigned lake is located, the bag is opened and fish and water are poured into a hopper. The plane descends upon the lake and the fish are released at approximately 100-150 feet above the water and traveling at a speed of about 60 miles per hour. Survival rates of these fish are unknown, but from visual observations and angler reports we know some survive.

Planting fish in high mountain lakes by fixed-wing aircraft is a unique experience. It requires the special skills of a veteran bush pilot, and that the passengers have the intestinal fortitude to overcome the effects of "dive-bombing" these lakes.

FINGERLING TRANSFERS AND PLANTS

In addition to our fry and catchable plants 242,025 fingerlings were planted or transferred (See Table 2). All Henrys Lake cutthroat were planted back into Henrys Lake. Two area reservoirs were planted with 40,472 fingerling trout. After all allocations were met, the remaining 168,734 rainbow fingerlings were transferred to Mackay and Hagerman Hatcheries.

Table 2. Fingerling plants and transfers from McCall Hatchery, October 1, 1979-September 30, 1980.

Date	Species	Receiving station or water	Number	Pounds	Size at release
8/25/80	Rainbow	Mackay Hatchery	65,040	240	271/pound
9/15/80	Rb x Ct	Corral Creek Res.	12,264	21	584/pound
9/15/80	Rainbow	Corral Creek Res.	8,200	50	164/pound
9/16/80	Rainbow	Goose Lake	20,008	122	164/pound
9/16/80	Cutthroat	Henrys Lake	32,819	175.5	187/pound
9/22/80	Rainbow	Hagerman Hatchery	103,694	775.75	134/pound
Totals			242,025	1,384.25	

Table 3. Fish feed fed to fingerling trout.

Type of feed	Size	Pounds fed	Cost
OMP II	Starter mash	250	$ 83.90
OMP II	1/32 pellets	450	153.00
OMP II	3/64 pellets	200	63.60
Rangens Dry	#2 fry	50	12.50
Rangens Dry	#3 fry	300	75.00
Rangens Dry	#4 fry	500	97.50
Totals		1,750	$ 485.50

HATCHERY VISITORS

Approximately 2,500 people visited the hatchery this year. Tours were given to Boise senior citizens, local cub scouts, Idaho Dairymens wives, Green Leaf Academy, local schools, McCall Progressive Club, Idaho Mechanical Engineers, YCC groups, Corps of Engineers, and CH2M Hill.

ACKNOWLEDGMENTS

Hatchery staffing during the fish year included Larry R. Wimer, Fish Hatchery Superintendent II; Bill **G.** Hutchinson, Fish Hatchery Superintendent I; Patrick F. Chapman, Fish Culturist; Jeffery Lang, Biological Aide and Laborers John Kirk and Kerry Wilkins.

LITERATURE CITED

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Leitritz, Earl 1976. Trout and Salmon Culture. Fish Bulletin 164. California Department of Fish and Game.

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SPAWNTAKING OPERATIONS

On 25 October 1978, 3,360 (800 pounds) two-year old Westslope cutthroat were taken from Rochat Pond and transported to Fish (Mud) Lake. These fish are from the 1976 year class of eggs received from Kings Lake, Washington. They are to become an additional Westslope cutthroat egg source. Resultant fish from this brood stock are to be returned to northern Idaho as well as used in our High Mountain Lakes Program.

Not knowing what sort of run to expect this year, our Fish Lake project was started in March. On 11 March, snowmobiles were used to gain access to an ice covered Fish Lake. No fish or spawning activity was observed **in** its small tributary stream. Again on 8 April, snowmobiles had to be used to get to the lake and still no sign of fish. On 28 April we were finally able to drive into the lake; the ice was off and there was no evidence of spawning activity in the stream. Fish were observed rising in the lake and subsequent fishing produced a male cutthroat about 14 inches long and in excellent condition. The fish was colorful and expected to spawn this year.

On 5 May, a weir and V-trap were installed in the stream approximately 200 yards up from the lake. At that time six cutthroat were observed spawning upstream from the trap. On the 9th we trapped one ripe male cutthroat which was to become the only fish trapped this year. On 12 May, four cutthroat were caught with hook and line near the mouth of the stream. The fish appeared to be females and were in excellent condition. When we hadn't trapped anymore fish by the 19th we began to look for answers. Investigating the stream from the trap to the lake, we found the stream to be very brushy, but felt the fish should have been able to negotiate it. Internal examination of two cutthroat caught on 28 May, showed them to be immature males and they were not expected to spawn this year. On 3 June, two males and three females were caught at various locations around the lake. From examinations it appeared that a portion of the population had indeed spawned this year. But when and where is not known. The trap and weir were removed from the stream on 12 June.

It is felt the trap was installed early enough, but that the majority of the fish just didn't mature this year. Another possibility is that Kings Lake cutthroat were not able to negotiate the brush-choked stream. To get a better idea of what's happening at Fish Lake, next year we plan to install the weir and trap much earlier and if forced to, use a Lake Merwin Trap.

FISH FEED UTILIZED

Oregon Moist Pellets, Formula II, and Rangens Dry Trout Feed were fed at McCall this year. Our fingerling trout were fed a total of 2,400 pounds at a cost of $697.70 (See Table 3). A conversion of 1.56 pounds of feed to produce 1 pound of fish was attained at a cost of $.454 per pound of fish. An additional 650 pounds of OMP II 1/8 pellet at a cost of $212.20 was fed to the rainbow catchables in order to maintain them during redistribution. No conversion was recorded for these fish. When all costs, excluding capital outlay items, but including the cost of redistributing fish from Hagerman Hatchery, each pound of fish produced cost $10.44.